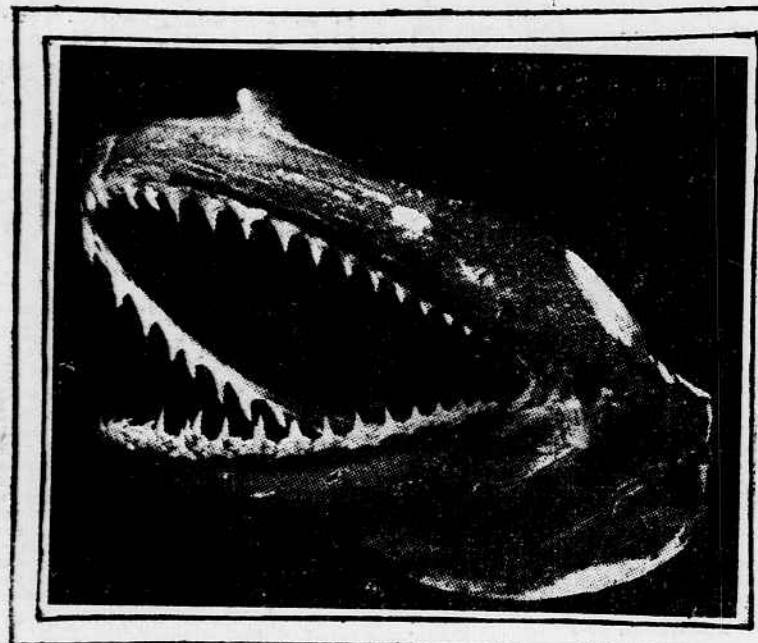


WASHINGTON, D. C., SUNDAY MORNING, JULY 23, 1916.

## How the Government Will Fight Man-Eating Sharks



TERRIBLE TEETH OF THE SHARK.

THE shark has enlarged its range. Not content with tropical waters, it has changed its fighting tactics as well. Not content with attacking single human beings as they swim blissfully unaware of danger, it matches its mettle against that of a government. A battle is on and the battle is between the man-eating shark and Uncle Sam.

For the first time in history a fish has become such a menace to the safety of the citizens of the United States that the federal government finds it is necessary to turn its attention to plans for a campaign against it. Surely some odd battles have been fought by this government, but never before has it turned its cannons upon a regiment of fish. However, never before have the shores of the upper Atlantic been visited by such a

vicious and murderous horde as threatens them today.

These are the days of innovations in battle accoutrements and Uncle Sam will adopt a novel weapon of warfare that has not even been put into operation by the wily and seemingly all-knowing belligerents across the sea. He is going to fight his new enemy with strong wire nets.

At the first consideration of the subject it was planned to call out the revenue cutters of the coast guard service, but the captains of the cutters, who have been detailed to make a report of the situation, report that they can do little toward protecting the bathing public against the shark invasion.

Their campaign would, of course, be one of extermination, but this has been deemed impracticable as the immediate step for protection. So the cutter ser-

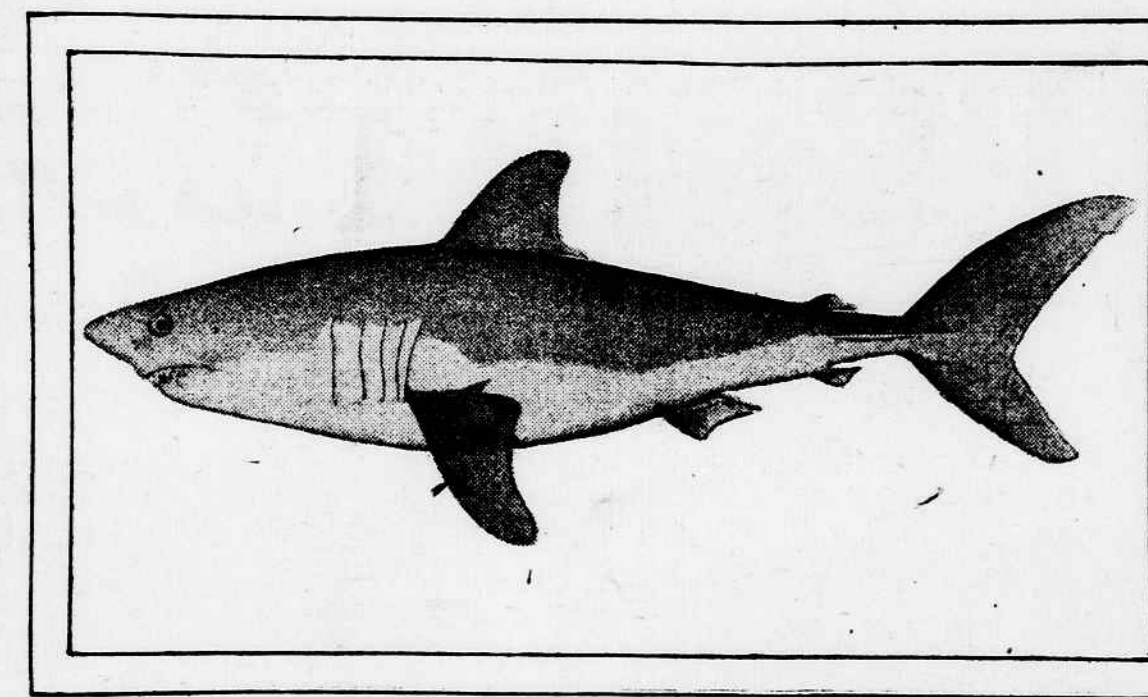
STRONG Wire Nets to Be Placed Around the Bathing Beaches—The Shark's Weapon. Coast Guard Service to the Aid of Bathers—A Campaign of Extermination on the Man-Eaters—Problems Faced by the Government—Various Kinds of Sharks—Dr. Hugh M. Smith of the Fish Commission Talks on the Subject—He Describes Various Monsters of the Deep.

ice is planning to co-operate with local authorities in the regions where the shark tragedies have occurred by stretching heavy steel nets to inclose the bathing spaces. Whether these nets will actually prevent sharks from penetrating inland to the pleasure beaches cannot be determined. Can the steel nets be extended deep enough so that the sharks will not be able to swim under them? The answer is that this system that is used successfully in Australia, where the shark menace is a seasonal affair and not an accidental or unusual one, as it is in our temperate waters, and as it is effective there, it should be so here.

The coast guard service has detailed its captains of revenue cutters to discuss the situation with city officials of the threatened states, and to agree upon the most efficacious procedures for this fish war. Dynamiting, they say, would be futile, for unfortunately many of the schools of edible fish would also be killed with the sharks. Treasury Department officials say that the erection of steel nets must remain for the present as Uncle Sam's only possible action against the sharks.

But the revenue cutter service is not the only branch of the federal government which has given cognizance to the shark. Representative Bacharach of New Jersey, whose state has been most harassed by the predaceous denizens of the deep, has introduced a bill in Congress providing an appropriation of \$5,000 to aid the bureau of fisheries in a proposed campaign. Representative Thomas Scully has suggested that a beach patrol, under the supervision of the bureau, might be advantageous. Scientists can study the sharks, which are obviously out of their native element, and which are only known to a limited degree anyway, and advise the government regarding them.

Whether any effective means can be decided upon for preventing repetitions



DRAWINGS SHOWING GENERAL PROPORTIONS OF THE SHARK.

of the horrible accidents which have cast their shadow of gloom over the entire coast line, is impossible to say, for this country's previous experience with man-eaters has been slight. Now, however, the Atlantic seems literally teeming with sharks, according to sea

captains putting into American ports. This should be no reason for unreasonable fear among sea bathers, for there are sharks and sharks, a few varieties of which are vicious and the rest harmless.

From the standpoint of scientists who are acquainted with the ranges of the ferocious varieties, it appears that the man-eaters around the Jersey coast are but stragglers from equatorial waters. Oceanic conditions are abnormal this season. Shark's food—smaller fish—are scarce in mid-ocean. It is suggested that the gulf stream is changing its course and extending the boundary of the tropical waters farther north. This diversity of opinion exists because the true facts are only to be guessed at; it is, accordingly, difficult to put Uncle Sam's official finger on the definite source of the disturbance. For the present the urgent need is to protect bathers. Details of hunting man-eaters and destroying them must follow.

As to the efficacy of the steel nets, one is inclined to question if they will bear up against the mighty teeth of the shark. Teeth are the shark's only weapon of warfare, but they are an excellent weapon. The jaw is its most perfectly developed combative organ. A shark thirty feet long has a jaw that

measures about twenty inches across. The teeth, which outline both upper and lower parts of the jaw, reach the great length of two and a half inches in the front-mouth parts. They are triangular in shape and sharpen to a deadly point. When these jaws shut it is like the closing of two sharp saws. They can amputate a human leg with little trouble, but can they file their way through a steel wire?

The maximum length of the man-eater is forty feet. The largest shark's teeth that have ever been seen average three inches in length, but no such specimen has ever been caught as far north as New York. Three of these ocean monsters have been killed during the past week, and the largest was eight feet long. Observers of the schools of sharks in the ocean say that they have not exceeded twelve feet in length.

The shark experts of the American Museum of Natural History of New York city are investigating the attacks, and Prof. John H. Nichols has passed judgment that the white shark, only once before seen north of Cape Hatteras, is doing the deadly work. He and Prof. Frederick A. Lucas of the same museum, both authorities on the subject of sharks, are giving their most active attention to the developments of the shark warfare.

The white shark which Prof. Nichols mentions is the true man-eater. It is, of all the sharks, the greatest object of dread. It has the widest tropical distribution and is a great glutton. It feeds on sea animals and is attracted anywhere by the smell of offal. It is suggested that the garbage in New York bay is probably accountable for its ventures so far shoreward at this time. It can swallow a man whole, for its stomach is a perfect reservoir.

This is the great white shark which figures in the average sailor's story. Other varieties of these huge fish are the whale, elephant and sleeper shark. "The sleeper shark," says Dr. Hugh M. Smith, commissioner of the bureau of fisheries, "appears to have developed its body at the expense of its brain, for it is a sluggish glutton about six times as long as the average man. At home in the arctic regions, it sometimes makes visits as far south as Cape Cod. It is most often observed lying quietly on the surface apparently dozing and easily approached, but at times when hungry it arouses itself and fiercely attacks whales, biting huge pieces out of their sides and tails. It is so voracious that the garbage in New York bay is probably accountable for its ventures so far shoreward at this time. It can swallow a man whole, for its stomach is a perfect reservoir.

The elephant shark is an inhabitant of the polar seas, but occasionally strays as far south as Virginia and California. It reaches a maximum length of five feet and is exceeded in size by only three or four animals extant. Provided with small teeth, it feeds on fish and is not of a ferocious disposition. It is dangerous only by virtue of its extreme bulk, and when attacked its powerful tail easily demolishes

boats. There are many records of elephant sharks twenty-five to thirty-eight feet long from the coasts of Maine and New York, but the species has not been common in our waters in recent years.

"The largest of all cold-blooded animals, with the exception of a few species of whales, is the whale shark, known in California. A few years ago a small specimen was obtained on the Florida coast. This shark has a very broad and obtuse snout and an exceedingly wide mouth armed with numerous minute teeth. The species is stated to attain a length of seventy feet, but notwithstanding its extreme size, it is harmless to man unless attacked. It feeds on small animals."

It is possible that these varieties constitute the great schools of sharks which have been seen in mid-ocean. Their bulk, seen at a long distance, would make it possible to confuse these species with the man-eaters. It is possible that the present influx of sharks may be turned to some account by the government if a successful method of catching them is agreed upon. The shark is a very valuable rough and, like those of all cartilaginous fishes, very durable. Aside from its formidable jaw and impenetrable skin, the shark has little equipment for battle. It is a great fleshy mass which crumples into a lump after it is dead. It differs from the ordinary fish in many ways. In the first place it is one of the oldest fish families and its anatomical structure is very simple.

But the skin is valuable; being of a porous nature, it is free from the defects which water exposure leaves on the skin of seals. It is possible to tan it into a non-cracking leather. A Parisian manufacturer has made quite a reputation tanning the skins of a species of Malabar shark into morocco and establishments in Turkey make green leather from the angel shark found in the Mediterranean.

The skin of the diamond shark, found in the North sea, is used to cover the sword grips of German officers, and for this purpose it is not surpassed by any material available. The principal uses made of shark skin at the present time are for covering desk ornaments, sword sheaths and a great variety of small articles. Comparatively few of the skins are tanned in the United States. The world supply of leather is reduced at present and it may be that the United States government can turn its campaign against the shark into a remunerative one.

But these are developments that must come later. The present stages of the battle are most important for the protection of the citizens at the summer resort. And these the government will pursue in an indefatigable way. Fighting these deadly monsters is the second stage of the campaign. Uncle Sam has enlisted his services during the past two weeks. Both battles are conducted under the direction of Treasury Department officials. The scourge of infantile paralysis has been combated by the bureau of public health, and now the revenue cutter service is preening its aid against the menace of the deadly shark.

## Rare Books About Early America to Be Sold

Special Correspondence of The Star.

NEXT month there will be sold in London, at one of those auctions which occur here from time to time when the world's greatest rarities are placed on the market, a library of books, pamphlets and maps having to do with the earliest history of America.

Some of the specimens which will be sold have duplicates elsewhere; others have none. For years they have remained in England, in private hands. Now the owner, an English gentleman whose ancestors started the collection about a hundred years ago, and for two or three generations others of the family kept on gathering in "Americana," has decided to sell. He is not a collector himself, and the Americana now to be sold is only a section of a great library. The owner is S. R. Christie-Miller of Britwell Court, where the library is one of the most famous in England. The sale will be conducted by a well known firm.

It is estimated that this collection is worth between \$50,000 and \$75,000. Some of the single volumes will run to a value of \$2,000 to \$4,000. It is the finest collection of Americana ever sold in this country, and there is, according to the experts, only one finer private collection anywhere—the Church collection in America, now owned by H. E. Huntington. This is not so large a collection as the Church, but it has

rare specimens of books of the period of the first settlement of America, some of which are not in the Church collection.

Some of the books deal with North America, Newfoundland and the Northwest passage. These are not the most important. Those having to do with New England and Virginia are by far the most interesting and valuable.

The collection contains a volume published in 1590 concerning "The New Found Land of Virginia." It is a rare thing by Thomas Hariot, and contains illustrations by De Bry, the famous German engraver. The title page reads:

A BRIEF AND TRUE REPORT OF THE NEW FOUND LAND OF VIRGINIA, OF THE COMMODITIES AND OF THE NATURE AND MANNERS OF THE PRINCIPAL INHABITANTS, DISCOVERED BY THE ENGLISH COLONY THERE SEATED BY SIR RICHARD GRENVILLE OF GRENVILLE, KNIGHT, IN THE YEAR 1585; WHICH PROVINCE WAS UNDER THE GOVERNMENT OF SIR WALTER RALEIGH, KNIGHT, LORD VARDEN OF THE TOWER, who therein hath been favoured and authorised by Her Majesty; and her Letters Patents; This Book is made into English by the above Sir Walter Raleigh, a member of the Colony and there employed in Discovery.

Only three copies of this book are known to exist in private hands, and of these, two are imperfect. It gives an account of Raleigh's abortive attempt to colonize Virginia in 1585, and the illustrations it contains are after drawings made by White at Roanoke in that year. Raleigh's first voyage to Guiana was made in 1595, his account of it, "The Discoverie of the Large, Rich and Bewtiful Empire of Guiana," appearing in the following year. His second expedition, under Lawrence Keymis, started in 1596, the account of it being written and published in the same year ("A Relation of the Second Voyage to Guiana").

After Raleigh's failure, the next event of great importance in Virginia was the granting of a patent to the London company, formed in 1606, for the

colonization of America. On New Year's day, the first of January, 1607, the following year was published the earliest printed account of the settlement of Jamestown, under the following quaint title:

A TRUE RELATION OF SUCH OCCURRENCES AND ACCIDENTS OF NOATE AS HATH HAPPENED IN VIRGINIA SINCE THE FIRST PLANTING OF THAT COLONY, which is now resident in the South part thereof, till the last return from thence, written by Captaine Smith Comendore of the said Colony to a Worshippful friend of his in England.

The period of 1606-09 has been called "a wretched series of squabbles, difficulties and failures," but the venture did not fail. In 1610 Gates, Sommers and Newport set sail with a fleet of nine vessels and 500 emigrants for Virginia. Seven of the ships arrived safely, but the Sea Venture, in which were the three leaders, was wrecked on the Bermudas. "The story is told by Silvester Jourdan, in a book entitled:

A DISCOVERY OF THE BERMUDAS OTHERWISSE CALLED THE ISLE OF DIVES, BY SIR THOMAS GATES, SIR GEORGE SOMMERS, AND CAPTAIN NEWPORT, with Divers others. Set forth for the love of my Country, and also for the good of the Plantation in Virginia.

This book is one of the treasures of the collection. There is only one other known copy. Apart from its great historical interest it has the added importance of having suggested the plot of Shakespeare's "Tempest." One of the books of the collection contains a detailed account of the baptism and marriage of Pocahontas to John Rolfe. Another is Strachey's "Lawes Divine, Morall and Martiall," of Virginia. In 1602 John Rolfe, being most pleasant, fruitful and commodious soldier. The book contains amazing geographic

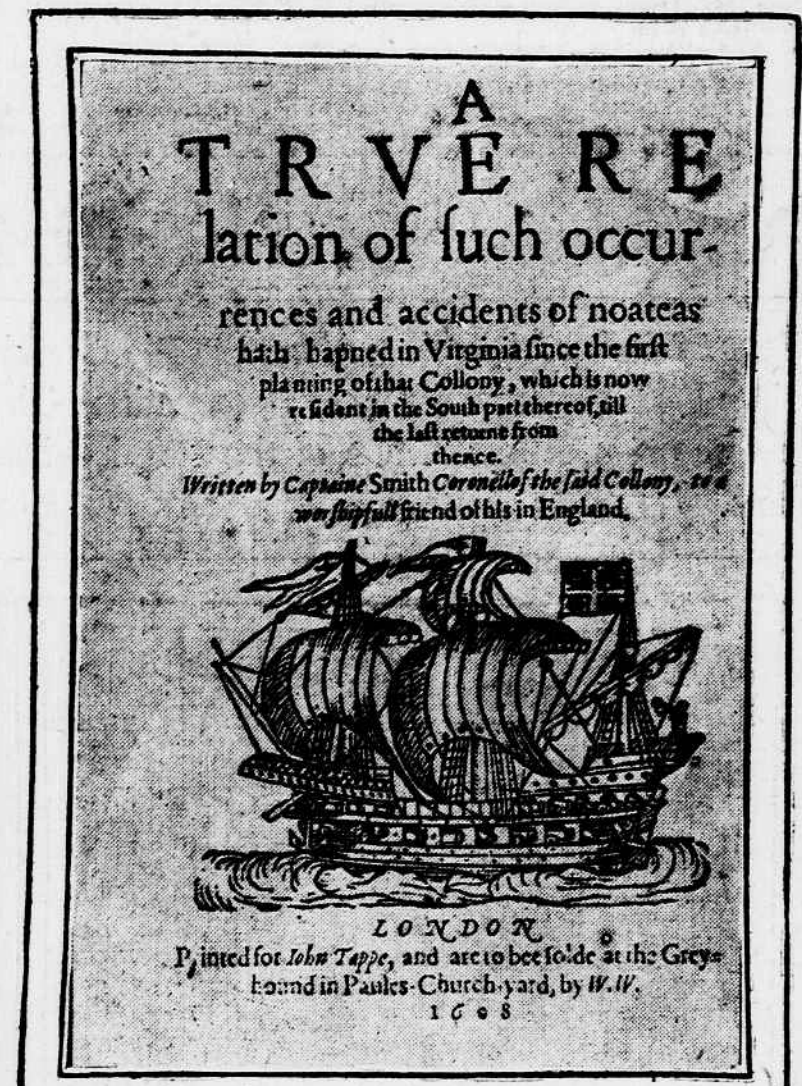
information, for a part of the title says:

"Whereunto is annexed a treatise, containing important inducements for the planting of those parts, and finding a passage that way to the south sea and China."

The books about New England are excessively interesting. The first attempt to settle in New England was made in 1602 by Bartholomew Gosnold. In 1605 George Weymouth crossed the ocean and in 1614 the gallant Capt. John Smith tried. These expeditions were unfruitful. Capt. Smith gave the country its name and published a map of it in

A DESCRIPTION OF NEW ENGLAND, OR THE OBSERVATIONS AND DISCOVERIES OF CAPTAIN JOHN SMITH (Admirall of that Country) in the North of America, in the Year our Lord 1614; with the Successes of Six Ships

early years they passed safely through many perils. There was first the danger that their union would be broken up by such cavalier intruders as Thomas Morton of Merrymount (the site of the present town of Quincy), "New English Canaan," 1637, there is a copy in the collection; secondly, the danger from such fanatics as Mrs. Hutchinson, who greatly disturbed the people of Boston by a series of transcendental lectures delivered in 1636, and was bitterly denounced by Thomas Weld in "A Short Story of the Rise, Reign and Ruin of the Antinomians, Familists and Libertines that Infected the Church of New England," 1644; thirdly, and by far the most formidable, the danger from Indians, against whom a bitter war, known from the chief



FRONT PAGE OF A BOOK ON VIRGINIA WRITTEN BY CAPT. JOHN SMITH AND PUBLISHED IN LONDON IN 1608. VOLUME IS ABOUT TO BE SOLD IN LONDON.

that went the next year 1615, and the accidents befall him among the French men of war; with the proofs of the present benefit this Country Affords; whether this present year, 1616, eight voluntary ships are gone to make further tryall.

Capt. Smith engaged in propaganda for settlers. One of the rare books of the collection is entitled "The Yearly Proceedings of this Country in Fishing and Planting since the year 1609, to the year 1610, and their present estate. Also how to prevent the greatest inconveniences, by their proceedings in Virginia, and other plantations, by approved examples. With the Countries Armes, a description of the Coast, Harbours, Habitations, Landmarks, Latitude and Longitude, with the Map, allowed by our Royall King Charles. By Captaine John Smith, sometimes Governour of Virginia, and Admirall of New England.

The voyage of the Mayflower is described in detail in a volume entitled "Good News from New England," published in 1624 and written by Edward Wilson, a pilgrim father, who probably prevented the colonists from being massacred by the Indians by saving the life of the Indian chief Massasoit. A copy of one of the books to be sold, "A Voyage into New England Begun in 1623 and Ended in 1624," was sold for \$2,000 a few years ago.

It is not surprising that the settlers believed themselves to be specially favored by Providence, for in these

hostile tribe as the Pequot war, was waged in 1636-7.

It is described by Capt. John Underhill, one of the leaders of the settlers, in "Lives from America," 1638, and the library also contains a very rare narrative by P. Vincent of the final victory entitled "A True Relation of the Late Battell Fought in New England Between the English and the Pequot Salvages," 1653.

After 1640 the character of the colony was fixed and its future assured, but in 1675-7 its prosperity, and even its existence, were threatened by another Indian rising under the formidable Metacomb, chief sachem of the Wampanoags. A number of contemporary accounts of this war, which from the name given by the English to the Indian chief, is known as King Philip's war, are in the library, including a magnificent copy of William Hubbard's "Narrative of the Troubles with the Indians in New England," printed at Boston, Mass., 1677, which contains the first map engraved in America, the "True History of the Captivity and Restoration of Mrs. Mary Rowlandson," 1682, who was in the hands of the Red Indians for three months and was eventually ransomed for £20.

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